

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Richard E. Demaray; Kai-An Wang; Ravi B. Mullapudi; Qing Zhu;
Hongmei Zhang; Harold D. Ackler; John C. Egermeier; Rajiv Pethe

Assignee: Symmorphix, Inc.

Title: As-Deposited Planar Optical Waveguides With Low Scattering Loss
And Methods For Their Manufacture

Serial No.: Not assigned yet Filing Date: Herewith

Examiner: Not assigned yet Group Art Unit: Not assigned yet

Docket No.: M-11522 US

San Jose, California
July 10, 2001

**COMMISSIONER FOR PATENTS
Washington, D. C. 20231**

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR § 1.97(b)

Dear Sir:

Pursuant to 37 C.F.R. § 1.56, § 1.97 and § 1.98, the documents listed on the accompanying PTO Form-1449 are called to the attention of the Examiner for the above patent application. Copies of these documents are enclosed.

Citation of these documents shall not be construed as:

1. an admission that the documents are necessarily prior art with respect to the instant invention;
 2. a representation that a search has been made, other than as described above; or
 3. an admission that the information cited herein is, or is considered to be, material to patentability as defined in § 1.56(b).

EXPRESS MAIL LABEL NO:

EL 797 672 575 US

Respectfully submitted,

Robert P. Saxon

Robert P. Saxon
Agent for Applicants
Reg. No. 43,087

**LAW OFFICES OF
SKJERVEN MORRILL
MacPHERSON LLP**

**25 METRO DRIVE
SUITE 700
SAN JOSE, CA 95110
(408) 453-9200
FAX (408) 453-7979**

74/105
D161
219/22

Sheet 1 of 6

U.S. Department of Commerce, Patent and Trademark Office					Atty Docket No.	Serial No.		
					M-11522 US	Not assigned yet		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT					Applicants			
(Use several sheets if necessary)					Demaray, Richard E. et al.			
					Filing Date	Group		
					Herewith	Not assigned		
U.S. Patent Documents								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	AA	5,107,538	4/21/92	Benton et al.	385	130		
	AB	5,119,460	6/2/92	Bruce et al.	385	142		
	AC	5,206,925	4/27/93	Nakazawa et al.	385	142		
	AD	5,252,194	10/12/93	Demaray et al.	204	298.2		
	AE	5,303,319	4/12/94	Ford et al.	385	131		
	AF	5,381,262	1/10/95	Arima et al.	359	341		
	AG	5,427,669	6/27/95	Drummond	204	298.2		
	AH	5,475,528	12/12/95	LaBorde	359	341		
	AI	5,483,613	1/9/96	Bruce et al.	385	129		
	AJ	5,555,127	9/10/96	Abdelkader et al.	359	341		
	AK	5,563,979	10/8/96	Bruce et al.	385	142		
Foreign Patent Documents								
							Translation	
		Document	Date	Country	Class	Subclass	Yes	No
	AL	WO 00/21898	4/20/00	PCT	C03C	13/04	X	
	AM	WO 00/22742	4/20/00	PCT	G02B	6/26		
	AN	EP 0867 985A1	9/30/98	Europe	H01S	3/06		
	AO							
	AP							
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)								
	AQ	Asghari et al., "ASOC – A Manufacturing Integrated Optics Technology," Part of the SPIE Conference on Integrated Optics Devices III, SPIE Vol. 3620, pages 252-262 (January 1999).						
	AR	Bestwick, T., "ASOC silicon integrated optics technology," Part of the SPIE Conferences on Photonics Packaging and Integration, SPIE Vol. 3631, pages 182-190 (January 1999).						
	AS	Choi et al., "Er-Al-codoped silicate planar light waveguide-type amplifier fabricated by radio-frequency sputtering," Optics Letters, Vol. 25, No. 4, pages 263-265 (February 15, 2000).						
Examiner			Date Considered					
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.</p>								

U.S. Department of Commerce, Patent and Trademark Office				Atty Docket No.	Serial No.			
				M-11522 US	Not assigned yet			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Applicants				
(Use several sheets if necessary)				Demaray, Richard E. et al.				
				Filing Date	Group			
				Herewith	Not assigned yet			
U.S. Patent Documents								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	AA	5,565,071	10/15/96	Demaray et al.	204	192.12		
	AB	5,603,816	2/18/97	Demaray et al.	204	298.07		
	AC	5,613,995	3/25/97	Bhandarkar et al.	65	384		
	AD	5,718,813	2/17/98	Drummond et al.	204	192.12		
	AE	5,719,976	2/17/98	Henry et al.	385	50		
	AF	5,841,931	11/24/98	Foresi et al.	385	131		
	AG	5,847,865	12/8/98	Gopinath et al.	359	343		
	AH	5,855,744	1/5/99	Halsey et al.	204	192.12		
	AI	5,900,057	5/4/99	Buchal et al.	117	109		
	AJ	5,996,491	10/12/99	DiGiovanni	385	127		
	AK	6,001,224	12/14/99	Drummond et al.	204	192.12		
Foreign Patent Documents								
							Translation	
		Document	Date	Country	Class	Subclass	Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)								
	AQ	Horst et al., "Compact, Tunable Optical Devices in Silicon-Oxynitride Wave Guide Technology," IBM Research Division, 3 pages (1999).						
	AR	Hübner, J. and Guldberg-Kjaer, S., "Planar Er- and Yb-Doped Amplifiers and Lasers," COM Technical University of Denmark, 10 th European Conf. On Integrated Optics, Session WeB2, pages 71-74 (2001).						
	AS	Kato et al., "Recent progress on PLC hybrid integration," Part of the SPIE Conference on Optoelectric Integrated Circuits III," SPIE. Vol. 3631, pages 28-36 (January 1999).						
Examiner			Date Considered					
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.</p>								

U.S. Department of Commerce, Patent and Trademark Office				Atty Docket No.	Serial No.			
				M-11522 US	Not assigned yet			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Applicants				
(Use several sheets if necessary)				Demaray, Richard E. et al.				
				Filing Date	Group			
				Herewith	Not assigned yet			
U.S. Patent Documents								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	AA	6,024,844	2/15/00	Drummond et al.	204	192.12		
	AB	6,157,765	12/5/00	Bruce et al.	385	129		
	AC	5,831,262	11/3/98	Greywall et al.	250	227.14		
	AD							
	AE							
	AF							
	AG							
	AH							
	AI							
	AJ							
	AK							
Foreign Patent Documents								
							Translation	
		Document	Date	Country	Class	Subclass	Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)								
	AQ	Ladouceur, F. et al., "Effect of side wall roughness in buried channel waveguides," IEEE Proc., Vol. 141, pages 242-248 (August 1994).						
	AR	Laurent-Lund, C. et al., "PECVD Grown Multiple Core Planar Waveguides with Extremely Low Interface Reflections and Losses," IEEE Photonics Technology Letters Vol. 10, No. 10, pages 1431-1433 (October 1998).						
	AS	Lee, Kevin K. et al., "Effect of size and roughness on light transmission in a Si/SiO ₂ waveguide: Experiments and model," <i>American Institute of Physics</i> , pages 1617-1619 (2000).						
Examiner		Date Considered						
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.								

U.S. Department of Commerce, Patent and Trademark Office			Atty Docket No.	Serial No.				
			M-11522 US	Not assigned yet				
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)			Applicants					
			Demaray, Richard E. et al.					
			Filing Date	Group				
			Herewith	Not assigned yet				
U.S. Patent Documents								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	AA							
	AB							
	AC							
	AD							
	AE							
	AF							
	AG							
	AH							
	AI							
	AJ							
	AK							
Foreign Patent Documents								
							Translation	
		Document	Date	Country	Class	Subclass	Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)								
	AQ	Marques, P.V.S. et al., "Planar Silica-on-Silicon Waveguide Lasers Based in Two Layer Core Devices," 10 th European Conference on Integrated Optics, Session WeB2, pages 79-82 (2001).						
	AR	Ohkubo et al., "Polarization-Insensitive Arrayed-Waveguide Grating Using Pure Si)2 Cladding," Fifth Optoelectronics and Communication Conference (OECC 2000) Technical Digest, 2 pages (July 2000).						
	AS	Ono et al., "Design of a Low-loss Y-branch Optical Waveguide," Fifth Optoelectronic and Communications Conference (OECC 2000) Technical Digest, 2 pages (July 2000).						
Examiner		Date Considered						
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.</p>								

U.S. Department of Commerce, Patent and Trademark Office				Atty Docket No.	Serial No.			
				M-11522 US	Not assigned yet			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)				Applicants Demaray, Richard E. et al.				
				Filing Date	Group			
				Herewith	Not assigned yet			
U.S. Patent Documents								
*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate	
	AA							
	AB							
	AC							
	AD							
	AE							
	AF							
	AG							
	AH							
	AI							
	AJ							
	AK							
Foreign Patent Documents								
							Translation	
		Document	Date	Country	Class	Subclass	Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)								
	AQ	Roberts et al., "The Photoluminescence of Erbium-doped Silicon Monoxide," Department of Electronics and Computer Science," 7 pages (June 1996).						
	AR	Schermer, R. et al., "Investigation of Mesa Dielectric Waveguides," <i>Proceedings of the OSA Integrated Photonics Research Topical Meeting and Exhibit</i> , Paper No. IWB3 (June 11, 2001).						
	AS	Shmulovich et al., "Recent progress in Erbium-doped waveguide amplifiers," Bell Laboratories, 3 pages (1999).						
Examiner		Date Considered						
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.								

U.S. Department of Commerce, Patent and Trademark Office		Atty Docket No.	Serial No.
		M-11522 US	Not assigned yet
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Applicants	
(Use several sheets if necessary)		Demaray, Richard E. et al.	
		Filing Date	Group
		Herewith	Not assigned yet

U.S. Patent Documents

*Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

Foreign Patent Documents

		Document	Date	Country	Class	Subclass	Translation
	AL						
	AM						
	AN						
	AO						
	AP						

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AQ	Tervonen, A., "Challenges and opportunities for integrated optics in optical networks," Part of the SPIE Conference in Integrated Optics Devices III, SPIE Vol. 3620, pages 2-11 (January 1999).
	AR	Ting et al., "Study of planarized sputter-deposited SiO ₂ ," <i>J. Vac. Sci. Technol.</i> , 15(3) pages 1105-1112 (May/June 1978).
	AS	

Examiner Date Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with your communication to applicant.